REMARKS/ARGUMENTS

Please reconsider the application in view of the above amendments and the following remarks. Claims 1-43 remain in this application. Applicant has cancelled withdrawn claims 16-31, 34, 41 and 43 and is pursuing these claims in a separate divisional application.

Applicant notes with appreciation that the Examiner has allowed claims 32, 33 and 35-40. The Examiner further indicated that claims 2 and 3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all the limitations of the base claim and any intervening claim. For reasons stated below, Applicant believes that the base claims from which these claims depend are allowable and that there is no need to rewrite these claims in independent forms. Accordingly, Applicant respectfully defers rewriting the claims at this time.

Interview

Applicant's Attorney, Jennie Salazar, and inventor, Stephane Virally, had a teleconference on December 1, 2005 with Examiner Frank Tsay. No agreement was reached concerning the case. As requested by the Examiner, Applicant has set forth the arguments in support of the claims below:

Rejection(s) under 35 U.S.C § 102

Claims 1, 4-15 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Finke et al (US 6,920,085). This rejection is respectfully traversed.

Applicant's Claim 1 recites, *inter alia*, a drilling fluid modulator in fluid communication with at least one of the group consisting of the standpipe and the return line. As recited in Claim

1, the modulator is a device as shown in Figure 3A and 3B that is used to vary the flow of mud. *See, specification, paragraph [0048].* As shown in Fig. 2, the modulator (210) is positioned in bypass system (200). As shown in greater detail in Figs. 3A and 3B, the modulator has a stator (304) with a rotor (302) that continuously rotates to cause the flow restriction in the modulator to alternately close to a minimum size and open to a maximum size to create sine wave pulses in the mud flow. *See, Specification, paragraph [0061].* Central passages are provided in the modulator to enable at least some flow to pass through the modulator so that the flow through the modulator is never completely stopped. *See, Specification, paragraph [0062].* The modulator (210) may be used in combination with other fluid devices, such as shut off valve (204), flow restrictor (205), flow diverter (206) and/or flow restrictor (215). *See, Fig. 2.* No such modulator is provided by the art of record.

The Examiner suggests that the transmitter assembly (6) of Finke anticipates Applicant's modulator. *See Office Action, bottom of page 2 and top of page 3.* According to Finke, the "transmitter assembly 6 consists of a flow restrictor 8, a flow diverter 9, a flow control device such as a choke valve 10 with an actuator 13, and a downstream orifice 11." *See Finke Col. 7, lines 44-47.* There is no disclosure of a drilling fluid modulator as described in Applicant's specification. Moreover, as described above, Applicant's drilling fluid modulator may be used in combination with many of the devices in the transmitter assembly 6 of Finke, such as the flow restrictor 8 and flow diverter 9. Applicant has separately claimed such items in, for example, dependent claims 7 and 11. Thus, the transmitter assembly 6 and the modulator as claimed are different components.

Moreover, the transmitter assembly 6 of Finke cannot perform as a modulator. As described in Applicant's specification, a modulator varies the flow of mud. *See, Specification,*

paragraph [0048]. According to Finke, the flowrate through the bypass line is adjustable in the field by changing out the flow restrictor rather than restricting the flow through the flow control device. *See, Finke, Col. 4, lines 41-43*. Finke also teaches that the "choke valve is opened and closed to create a series of negative pressure pulses that travel down the drill string to be received and decoded by the downhole receiver." *See Finke, Col. 4, lines 64-67*. Finke, therefore, uses an on/off type of flow control, and fails to provide any type of modulator that can vary the flow of fluid.

Claim 42 was also rejected under 35 U.S.C. § 10(b) as being anticipated by Moll. Applicant respectfully traverses this rejection

Claim 42 recites, *inter alia*, a downlink system comprising at least one primary drilling fluid pump...and an electronic circuitry operatively coupled to the at least one primary drilling fluid pump and adapted to modulate a speed of the at least one primary drilling fluid pump. As described in Applicant's specification, the downlink system includes electronic circuitry that is operatively coupled to the motor for at least one mud pump and varies the speed of the mud pump to modulate the flow rate of the mud through the drilling system. *See, Specification, paragraph [0106]*. Moll fails to provide such a downlink system as recited in Claim 42.

Moll teaches a pump (28) driven by a motor (37). *See Moll, Figs. 1 and 7*. As described below, Moll teaches that the pump is operated in response to the opening and closing of valve 50:

> The setting of the motor 37 which drives mud pump 28 is not changed while signals are being transmitted to the earth through the circulating fluid string, with the result that the opening of valve 50 reduces the resistance to flow of the fluid downwardly through the string and permits pump 28 to operate at an increased rate of speed by virtue of the reduction in resistance to flow. Conversely, when valve 50 is closed, the increased resistance to downward flow of the fluid through the drill string causes pump 28 and its driving motor 37 to operate at a reduced speed with reduced downward flow of the fluid.

> *See Moll, Col. 4, lines 43-54.* [T]he rate of flow of the fluid is sensed by responding to variations in the rate at which pump 28 is driven by motor 27. As indicated previously when valve 50 at the downhole location is opened, the rate of operation of pump 28 by motor 27 automatically increases. *See Moll, Col. 6, lines 58-63.*

Thus, according to Moll, it is the valve 50 that controls the pump 28.

The Examiner suggests that the pump 28 and the control unit 38 having electronic circuit 63c anticipate the drilling fluid pump and electronic circuitry as recited in Claim 42. However, according to Moll, "electronic circuit 63c decodes and processes information from sensor 68 and actuates indicators 62c and 63c in correspondence therewith to represent the information sensed at the downhole location." *See Moll, Col. 6, line 63-Col. 7, line 5.* Thus, Moll's electronic circuit 63c actually receives information from the pump. There is no teaching or suggestion in Moll that the electronic circuitry 63c sends any control or other signal to pump 28. In fact, Moll teaches away from such a feature by teaching that valve 50 is used to automatically adjusts pump 28. *See Moll, Col. 6, lines 58-63.*

In view of the above, the cited art fails to anticipate or render obvious the claimed invention. Applicant, therefore, requests withdrawal of the rejection under 35 U.S.C. § 102.

Applicant respectfully requests that a timely Notice of Allowance be issued in this case. Applicant believes this reply to be fully responsive to all outstanding issues and place this application in condition for allowance. If this belief is incorrect, or other issues arise, do not hesitate to contact the undersigned at the telephone number listed below.

This paper is submitted in response to the Office Action dated September 28, 2005 for which the three-month date for response is December 28, 2005. Please apply any charges not covered, or any credits, to Deposit Account 19-0610 (Reference Number 19.0285).

Appl. No. 10/605,248
Response Dated December 7, 2005
Reply to Office Action Dated September 28, 2005

Date: 12/7/05

Respectfully submitted,

Jennie J.L. Salazar, Reg. No. 45,065
Schlumberger Technology Corporation
200 Gillingham Lane, MD 9
Sugar Land, TX 77478
Telephone: (281) 285-8809
Facsimile: (281) 285-8821